2(original). A heat exchanger as claimed in claim 1 wherein the plate end flange transverse distal edge portions are in the form of flange extensions extending generally parallel to the plate central planar portions.

3(original). A heat exchanger as claimed in claim 1 wherein the plate raised peripheral edge portions are formed with transverse notches located between but adjacent to said root areas, and wherein the U-shaped channel side walls have inwardly disposed peripheral flanges adapted to snap into said notches.

4(original). A heat exchanger as claimed in claim 3 wherein said notches have a depth greater than the width of the U-shaped channel side wall peripheral flanges.

5(original). A heat exchanger as claimed in claim 2 and further comprising a baffle attached to one of said flange extensions and extending between the U-shaped channel rear and side walls to divide the manifold into a plurality of compartments.

6(original). A heat exchanger as claimed in claim 2 and further comprising heat transfer fins located between the plate pairs and in contact with the plate planar central portions.

7(original). A heat exchanger as claimed in claim 3 and further comprising heat transfer fins located between the plate pairs and in contact with the plate planar central portions.

8(original). A heat exchanger as claimed in claim 2 wherein said transverse distal edge portions are formed with notches therein to adjust the flow distribution through the U-shaped channels.

9(original). A heat exchanger according to claim 1, wherein the end plates are formed with offset end flanges.

10(original). A heat exchanger according to claim 9, wherein the U-shaped channels are formed with parallel, U-shaped, inwardly disposed ribs adjacent to their ends to accommodate and act as locating guides for the offset end flanges of the end plates.

11(original). A heat exchanger according to claim 2, wherein the U-shaped channels are formed with parallel, inwardly disposed, closely spaced-apart, short ribs sandwiching therebetween the peripheral edges of the flange extensions.

12(original). A heat exchanger according to claim 1, further comprising an extended distal flange extension on one of the plates of a plate pair, said extended distal flange extension extending fully between the U-shaped channel rear and side walls to form a baffle.

13(original). A heat exchanger according to claim 12, wherein the U-shaped channel is formed with an inwardly disposed boss abutting and connected to said baffle.

14(original). A heat exchanger according to claim 5, wherein the U-shaped channel is formed with an inwardly disposed boss abutting and connected to said baffle.

15(original). A heat exchanger according to claim 9, further comprising end plate side skirts extending integrally around each offset end flange to form a pan that engages a respective one of the U-shaped channels.

16(original). A method of making a heat exchanger comprising the steps of:

providing an elongate strip of plate material having a planar central portion and raised peripheral edge portions; cutting the plate material into predetermined lengths; forming the plate lengths with offset end flanges extending in a direction away from the raised peripheral edge portions; arranging the plate lengths into plate pairs with the offset end flanges diverging and the plate peripheral edge portions in contact so as to define root areas at the joined peripheral edge portions; stacking said plate pairs so that the end flanges engage to space the plate pairs apart; providing U-shaped channels enclosing the plate offset end flanges, the channels having open ends and side walls joined to the flange lateral edge portions and extending inwardly beyond and covering the root areas; closing the open ends of the channels to form manifolds; forming inlet and outlet openings in the manifolds; and joining the plates and manifolds together to form a sealed heat exchanger.

17(original). A method of making a heat exchanger as claimed in claim 16 wherein the plates are arranged in a predetermined number of plate pairs having a predetermined height, wherein the U-shaped channels are provided in lengths at least as long as said predetermined height, and wherein the channel open ends are closed by providing end plates on each end of the stacked plate pairs extending between and closing the channel open ends.

18(original). A method of making a heat exchanger as claimed in claim 16 and further comprising the steps of providing a plurality of cooling fins and inserting said cooling fins respectively between the plate pairs.

19(original). A method of making a heat exchanger as claimed in claim 17 and further comprising the steps of providing a plurality of cooling fins and inserting said cooling fins respectively between the plate pairs.

20(original). A method of making a heat exchanger as claimed in claim 16 and further comprising the step of dividing the heat exchanger into zones by providing baffles in the U-shaped channels engaging the offset end flanges.

21(original). A method of making a heat exchanger as claimed in claim 17 and further comprising the step of dividing the heat exchanger into zones by providing baffles in the U-shaped channels engaging the offset end flanges.

22(original). A method of making a heat exchanger as claimed in claim 18 and further comprising the step of dividing the heat exchanger into zones by providing baffles in the U-shaped channels engaging the offset end flanges.

23(new). A radiator comprising:

a radiator core defining a front and a rear face thereof and including a plurality of generally rectangular shaped tubes interleaved with layers of fins for passage of air through said core; and

a collecting tank attached to said core in a fluid tight manner to provide fluid communication between said tubes and said collecting tank;

said tubes each having a pair of side walls extending through said core and joined by end walls at said front and rear face of said core;

said tubes each terminating at one end thereof in a formed segment wherein said end walls of each tube are bifurcated for a distance from said one end of the tube to define planar portions disposed substantially normal to said side walls and one of said side walls is adapted to contact a side wall of an adjacent tube in the core;

said adapted side wall being joined in a fluid tight manner to said contacted side wall of said adjacent tube;

said collecting tank having walls thereof extending over said front and rear faces of said core past said bifurcation of said end walls in substantial surface to surface with said planar portions and joined in a fluid tight manner to said end walls and said planar portions of said tubes along and beyond said bifurcation to thereby form a fluid tight joint between said walls of said collecting tank and said end walls of said tubes.

24(new). The radiator of claim 23 wherein both sidewalls are adapted to contact an adjacent tube.

25(new). The radiator of claim 23 wherein each of said tubes has a first tube half and a second tube half, each of said halves being generally U-shaped with, a pair of legs extending in a generally perpendicular direction from one of said side walls to form part of said end walls.

26(new). The radiator of claim 25 wherein said legs of said pair of tube halves are joined in fluid tight manner along the entirety of said tube except in said formed segment where said legs remain unjoined to form said bifurcation of said end walls.

27(new). The radiator of claim 23 wherein said end walls include a slit in said formed segment opening to the end of the tube to bifurcate said end wall in said formed segment.

28(new). The radiator of claim 26 wherein said legs of said tube halves are joined in a fluid tight manner, and said core is formed by brazing said tubes and fins together.

29(new). The radiator of claim 23 wherein said collecting tank includes a generally U-shaped body having walls of the U-shaped body spaced apart to slide over and simultaneously contact said front and rear faces of said core, said collector tank further including end plates adapted to close in a fluid tight manner an opening defined by an end of said U-shaped body of said

collecting tank and a side wall of a tube in said core.

30(new). A method for fabricating a headerless radiator comprising:

fabricating a plurality of tubes, each having a generally rectangular cross section comprised of a pair of spaced side walls joined by a pair of end walls;

adapting one end of each of said tubes to provide a formed segment having said end walls bifurcated for a distance from said one end to provide planar portions generally normal to said side walls and at least one side wall in said formed segment adapted to contact and seal against a sidewall of an adjacent one of said tubes when said tubes are joined together in an interleaved configuration with layers of fin to form a radiator core;

assembling a radiator core in a manner defining a front and a rear face thereof and including said plurality of generally rectangular shaped tubes interleaved with layers of fins for passage of air through said core; said sidewalls of said tubes extending through said core with said end walls at said front and rear faces of said core; and with said adapted side walls in said formed segments of said tubes contacting a sidewall of an adjacent tube in the core;

joining each said adapted side wall in said formed segments in a fluid tight manner to said contacted side wall of said adjacent tube;

attaching a collecting tank having walls thereof extending over said front and rear faces of said core along and beyond said bifurcation of said end walls and in substantial surface to surface contact with said planar portions; and

joining said collecting tank in a fluid tight manner to said end walls and said planar portions of said tubes along and beyond said bifurcation to thereby form a fluid tight joint between said walls of said collecting tank and said end walls of said tubes.

31(new). The method of claim 30 wherein the step of adapting includes forming at least one of said sidewalls in said formed segment at said one end of said tubes to contact a sidewall of an

adjacent tube in said core by inserting a forming tool into said one end of each of said plurality of tubes.

32(new). The method of claim 30 wherein the step of fabricating said tubes includes forming each of said tubes from a first and a second tube half, each of said tube halves including one of said side walls and part of both end walls.

33. The method of claim 32 wherein the step of fabricating said tubes further includes joining said first and second tube halves to form said tubes prior to said step of assembling said radiator core.

34(new). The method of claim 32 wherein the step of adapting is performed on at least one of said tube halves prior to joining the first and second tube halves to form a tube.

35(new). The method of claim 32 wherein the step of fabricating said tubes includes forming said tube halves into a generally U-shaped configuration by bending both edges of a flat strip to an angle substantially perpendicular to said flat strip, said edges thereafter comprising said parts of said end walls and said flat strip between said end walls comprising one of said side walls.

36(new). A method for fabricating a headerless radiator comprising:

fabricating a plurality of tubes, each having a generally rectangular cross section comprised of a pair of spaced side walls joined by a pair of end walls;

adapting one end of each of said tubes to provide a formed segment having said end walls bifurcated for a distance from said one end and at least one side wall in said formed segment adapted to contact and seal against a sidewall of an adjacent one of said tubes when said tubes are joined together in an interleaved configuration with layers of fin to form a radiator core;

assembling a radiator core in a manner defining a front and a rear face thereof and including said plurality of generally rectangular shaped tubes interleaved with layers of fins for passage of air through said core; said sidewalls of said tubes extending through said core with said end walls at said front and rear faces of said core; and with said adapted side walls in said formed segments of said tubes contacting a sidewall of an adjacent tube in the core;

joining each said adapted side wall in said formed segments in a fluid tight manner to said contacted side wall of said adjacent tube;

attaching a collecting tank having walls thereof extending over said front and rear faces of said core along and beyond said bifurcation of said end walls; and

joining said collecting tank in a fluid tight manner to said end walls of said tubes along and beyond said bifurcation to thereby form a fluid tight joint between said walls of said collecting tank and said end walls of said tubes;

said step of fabricating said tubes includes forming each of said tubes from a first and second tube half, each of said tube halves including one of said side walls and part of both end walls and further includes forming said tube halves into a generally U-shaped configuration by bending both edges of a flat strip to an angle substantially perpendicular to said flat strip, said edges thereafter comprising said parts of said end walls and said flat strip between said end walls comprising one of said side walls, and further includes bending said edges multiple times to form end walls of folded configuration.

37(new). The method of claim 36 wherein the step of fabricating further includes bending edges to form said portions of at least one end wall on each tube half which are configured in a complimentary fashion such that the portions of said at least one end wall on the first and second tube halves will engage and interlock with each other to facilitate fabrication of a tube.

38(new). The method of claim 30 wherein the step of joining said formed segments in a fluid

tight manner to said contacted sidewalls and said step of joining said collecting tank in a fluid tight manner to said end walls of said tubes are performed simultaneously.

39(new). A heat exchanger comprising:

a core having opposite front and rear faces and including a plurality of tubes of generally rectangular cross section with fins interleaved between adjacent tubes intermediate opposite ends of the tubes;

said tubes each having a pair of spaced side walls extending generally between said faces, and spaced end walls joining the side walls of each tube and located generally at said faces;

at least one end of each said tube having the end walls thereat split for a distance from one end extending to an intermediate location along a length of the tube to provide planar portions generally normal to said side walls and separated along the split so that at least one side wall, at said tube one end, contacts a side wall of an adjacent tube and is joined thereto in a fluid tight manner; and

a collecting tank having walls extending over said front and rear faces of said core and in substantial surface-to-surface contact with and joined in a fluid tight manner to said planar portions of said end walls at said tube one end where said end walls are split and extending to and past said intermediate location to thereby form a fluid tight joint between said tank walls and said end walls from said tube one end to and past said intermediate location.